Manual instruction

Air Source Heat Pump Unit Air Duct
ZONDA

1. **INTRODUCTION**

Dear customers:

In order to use this machine safely, please read this user's manual carefully before using and installation, especially pay attention to each notice remark for usage and maintenance. Also keep it carefully for later use. Heat pump water heater is a professional machine, it may cause damage or hazard when wrong installed. Relevant installation and maintenance shall be done by technical people. Please contact our installation service for reference.

Important warning:

1. When using for the first time, check if all the wiring are correct before you connect the unit to power supply.
2. If the power cord is damaged, please replace a new one offered from factory by professional technicians.
3. Power plug's rated current shall be in accordance with the model you buy.
4. bThe units must be ground wired. Never connect the ground line on neutral line or water pipe.
5. Product shall be singly assigned to a electrical leakage protection power .
6. Hot water above 50 may be burned, we suggest that you mix cold water with hot water from water tank for use.
7. Any equipment must not be inserted inside the heat pump unit, in case any accident or abnormal operation.
8. For your safety, please DO NOT change or mend the heat pump water heater yourself.

SPECIFICATION

Technical data

		252	253
Heating capacity	Kw	3	3
Water tank volume	l	250	250
Power input	W	790	790
Running current	A	3,6	3,6
Power supply	V/Ph/Hz	220-230/1/50	220-230/1/50
Compressor number		1	1
Compressor type		rotary	rotary
Rated outlet water temperature	°C	55	55
Max outlet water temperature	°C	55	55
Air volume	m3/h	450	450
Air pressure	Pa	60	60
Duct diameter	mm	Ø150	Ø150
Noise	dB(A)	49	49
Water inlet size/outlet size	cal	G 3/4"	G 3/4"
Net dimentions	mm	Ø640x1610	Ø640x1610
Pacage dimentrions	mm	705x705x1750	705x705x1750
Net weight	kg	84	88
Gross weight	kg	103	103

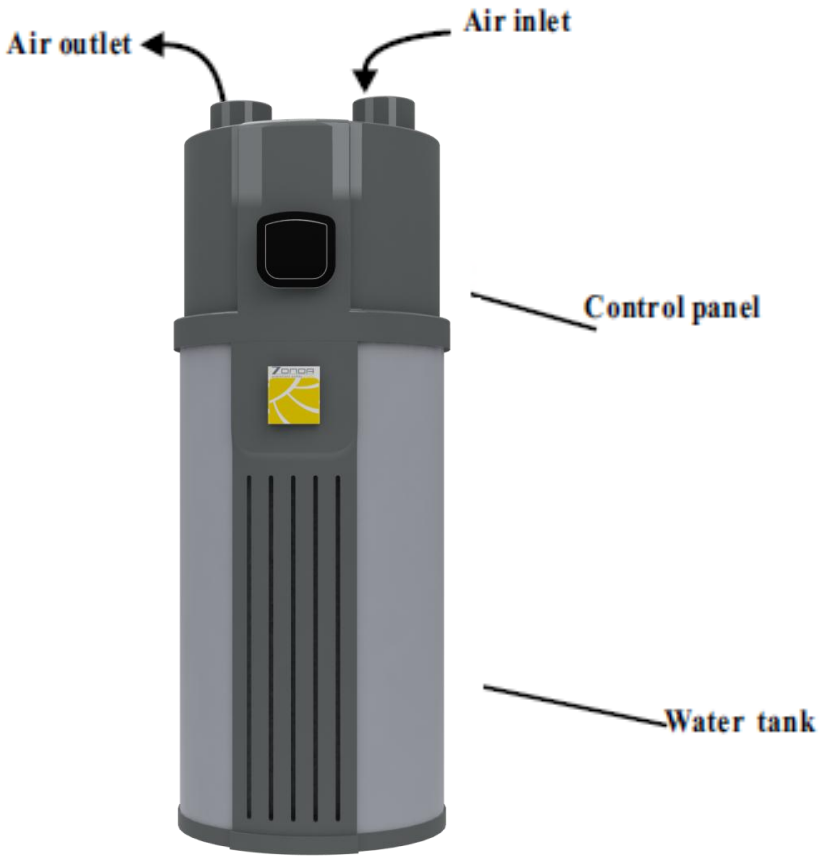
NOTICE :

1. The technology parameter is tested as below:20 for dry temperature outdoor, 15 for wet temperature outdoor; inlet water 15 ; outlet water 55 .
2.
3. Refer to the label on the unit if the data different from this table.

SPECIFICATION

Apperance and Features

- **High efficiency:**
  Smart design make normal working efficiency more than 30 %
- **Easy installation and operation**
  With LCD display, easy to handle and check all kind of temp and operation information
- **Stainless steel tank**
  Ensure clean water to users



- **Waste heat is useful heat**

The standard heat exchanger of the hot-water heat pump enables direct connection to a second heat generator, e.g. a solar heating system or a boiler.

- **Dehumidification in the recirculating air mode**

Dehumidified air in the laundry room supports laundry drying and prevents moisture-induced damage.

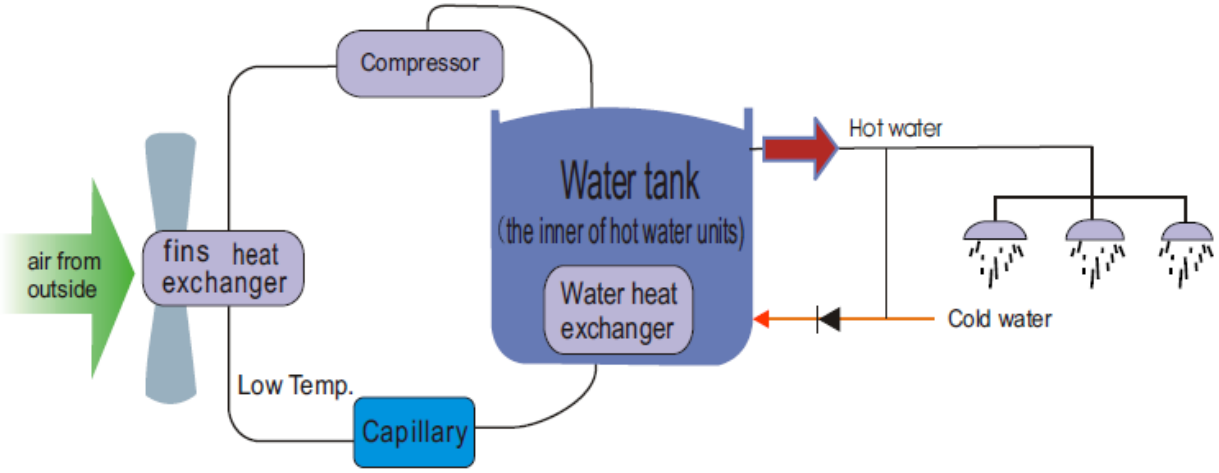
- **Cooling in the recirculating air mode**

The room air is extracted from the storage room or a wine cellar,subsequently cooled and dehumidified in the heat pump and finally re-introduced into the room.Recreation rooms, boiler

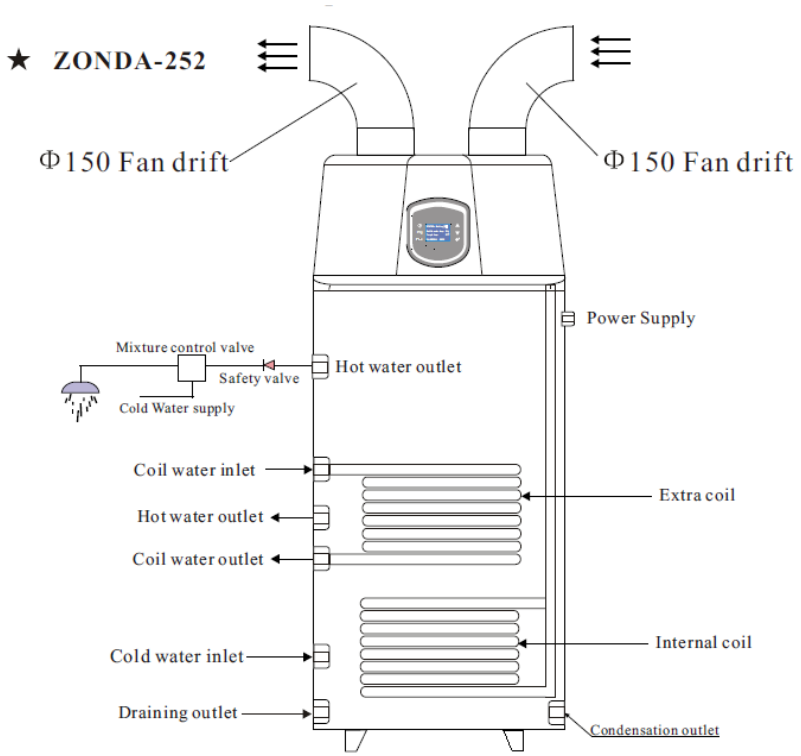
rooms or utility rooms areideal installation sites. The air-ducts leading through warm sections must be insulated to prevent the formation of condensation.

SPECIFICATION

Working principle



Dimentions



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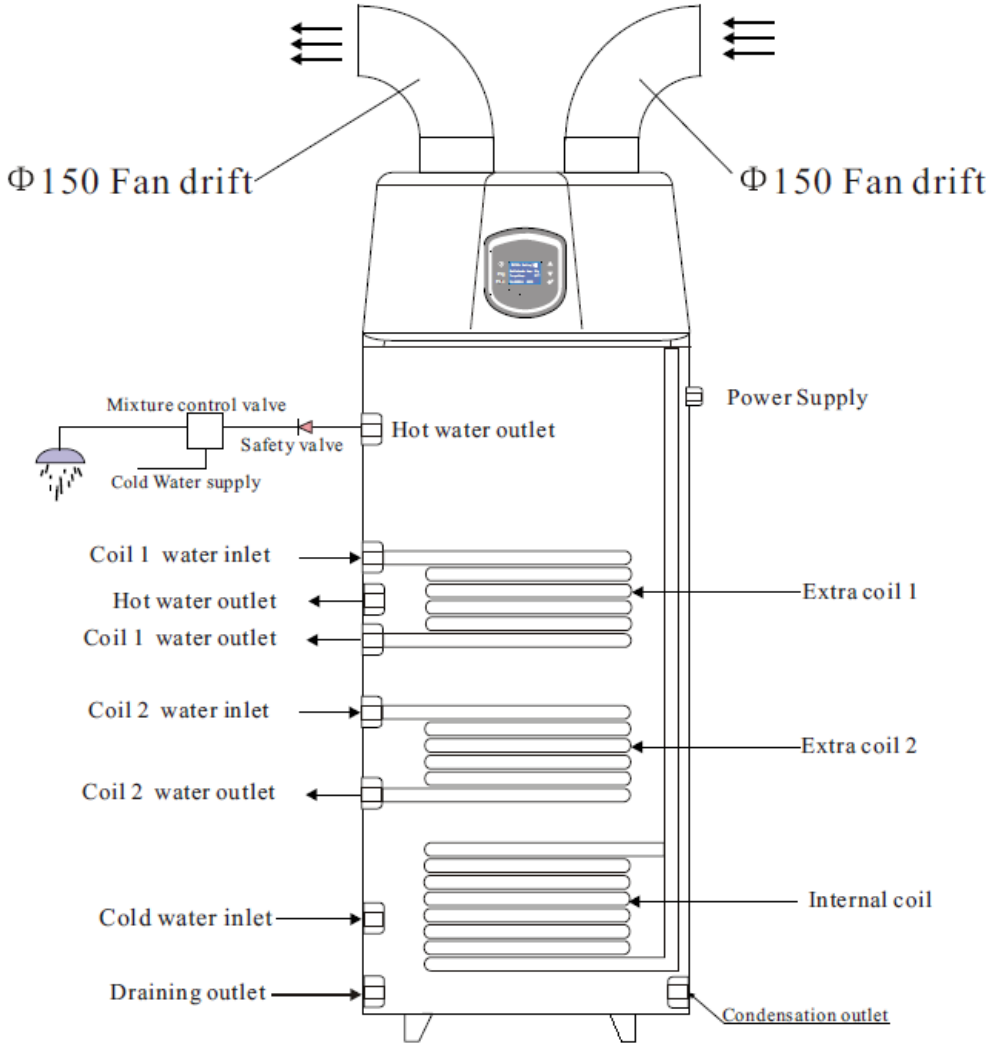
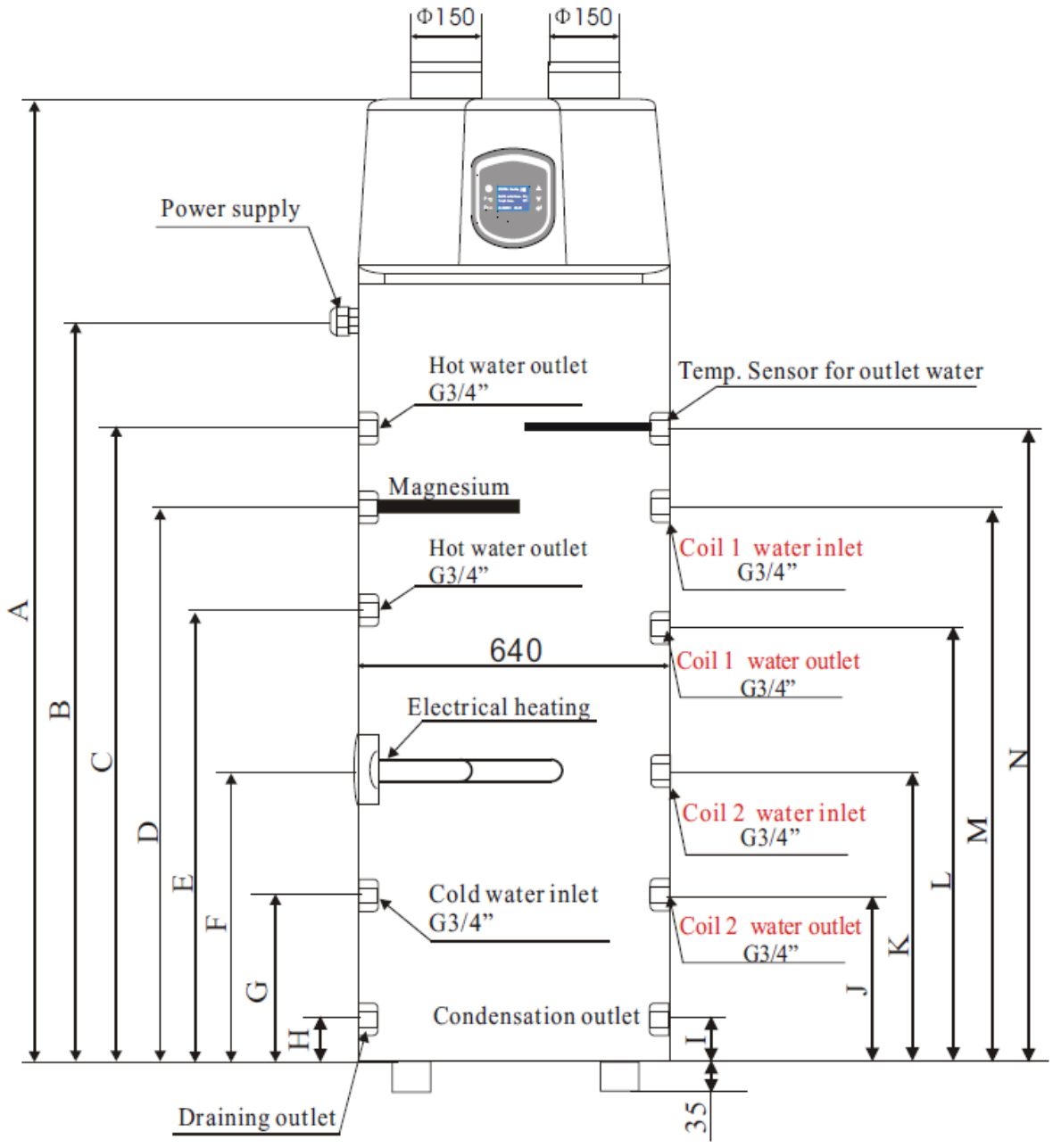

Φ150 Fan drift
Φ150 Fan drift
Power Supply
Mixture control valve
Safety valve
Hot water outlet
Cold Water supply
Coil 1 water inlet
Hot water outlet
Coil 1 water outlet
Extra coil 1
Coil 2 water inlet
Coil 2 water outlet
Extra coil 2
Cold water inlet
Internal coil
Draining outlet
Condensation outlet

Measure: mm

TYPE \ SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N
ZONDA-252	1535	1070	910	810	580	450	250	35	35	---	---	410	810	910
ZONDA-253	1535	1070	910	810	580	450	250	35	35	250	450	550	750	910



Maintain and overhaul

To choose a right model

-Please choose the model with right water tank volume according to the actual need for the energy saving and convenient use;

-This air source heat pump is providing hot water for home use;

Installation requirement and location

-The unit must be installed indoor and free from rain; There must be sufficient water supply near the unit;The unit must be installed horizontally. At air inlet and outlet, please connect ducted pipes to avoid that the return air goes into air outlet!

Water pipe connection

Please keep below points in mind when the water pipe is connected:

-To make the water resistance inside of the pipe as low as possible

-To keep the water pipe clean and free from dirty; when the connection is made there must be testing on the leaking; Ensuring there is no leak on the pipe then the insulation can be made;

- There must be one way valve and check valve installed on the water inlet pipe

Electrical wire connection

There is a power cable in the bottom of the unit which can be connected to the electric power by the users.

Transit

There must not be something on top of the unit, and keep it free from strike and extrusion during the transit

Trial running

Checkup before the trial running

-Check whether the water tank is full, or whether the insulation for the pipe is good;

-Check the electrical connection: check whether the voltage is normal, whether the wire connection is good and whether the earthing is made;

-Check the unit: check whether the screw and parts is good enough; and check if the indicator light on the controller is working fine or any failure alarm as it get power;

Trial running

-Turn on the unit with the wire controller

-Keep ear on the sound from the compressor when it start; if there is any sound abnormal the unit must be stoped and checked;

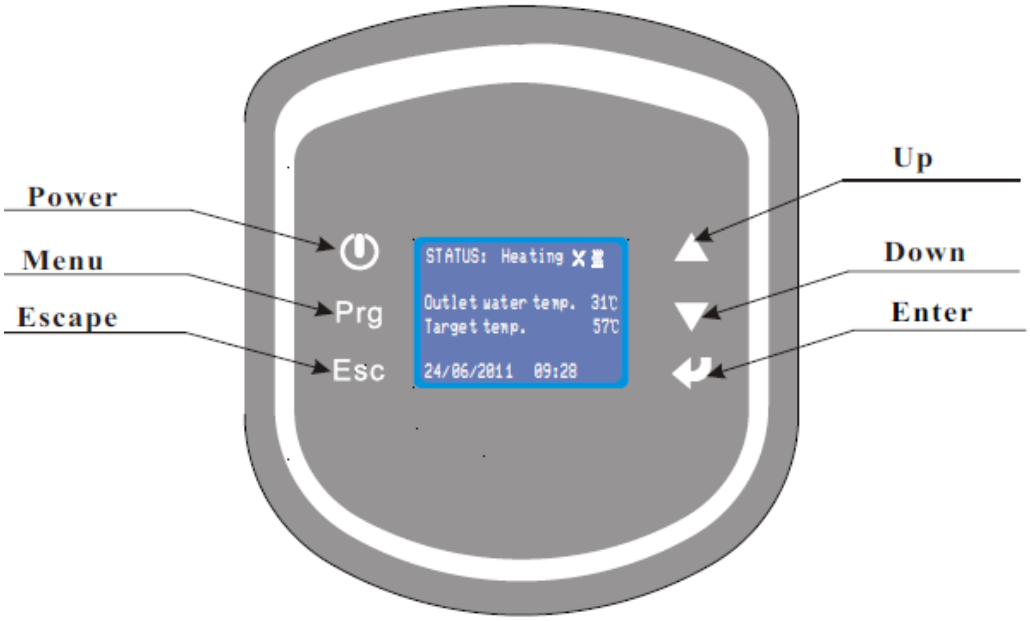
-Look into the tank water to see whether the water temperature fluctuation is normal;

-The parameter of the wire controller has been settled in the factory, they cannot be reset by the users; Please return to the qualified service man if the parameter need to be changed.

CONTROLLER INTRODUCTION

Function of controller

User Interface and Usage as the following



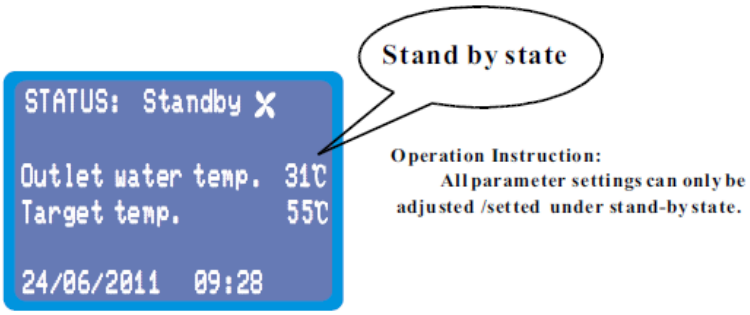


Fig.1

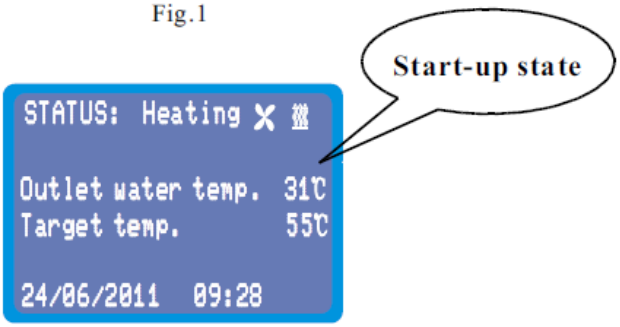


Fig.2

Function Screen

Press "**Prg**" button from Main Screen to access Function Screen, see **Fig.3**.

Press" ▲ " or " ▼ " to choose setting of 4 functions, then press

" ↵ " to enter setting of chosen function .

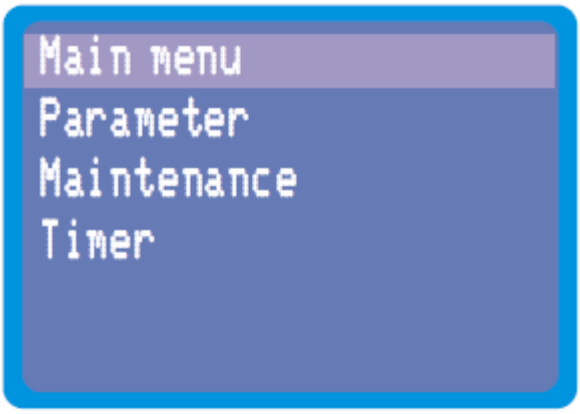


Fig.3

Main Menu

Press " ↵ " button to access the Main Menu,see **Fig.4**.

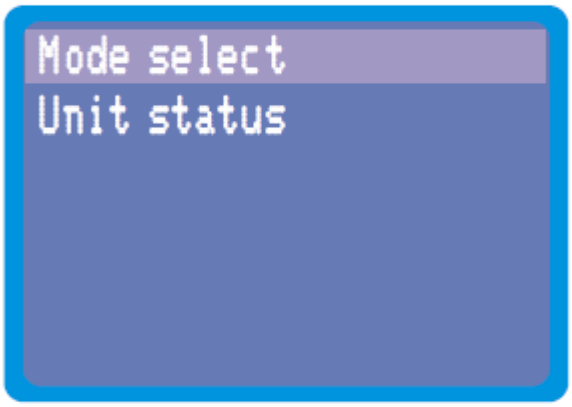


Fig.4

Mode Select

Press " ↵ " to enter FIG. 5 interface , for changing the setting of " Aux. Heating " and " Fan Mode" function . You may change status between ON and OFF by pressing

" ↵ ", press " ESC " to confirm and return to main interface.

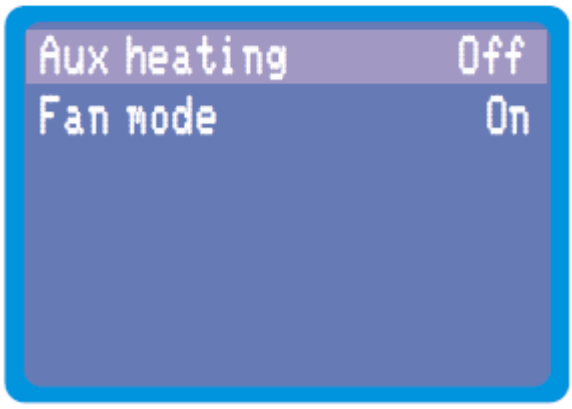


Fig.5

Unit Satus

Press " ▲ " or " ▼ " to move the cursor to " Unit Status" , then press " ↵ " to confirm and enter to interface of FIG.6.
This interface display the current real /actual running status , parameter data are not adjustable .

Fig.6

Parameter

Choose "**Parameter "**from Function Screen to access "**Parameter "**Screen, then press "**ENTER**" button to access the “Parameter” see Fig. 7.

Fig.7

Operation

Press " ▲ " or " ▼ " to move the cursor to "**Operation**" then press " ↵ " to confirm and enter interface of FIG.8. Press " ▼ " or " ▲ " to change the parameter value , then press "**ESC**" to confirm . Press " **ESC**" again to return to last interface .
"Out water temp"adjustable range:10-60
" T1(heating)"adjustable range:2-15 C

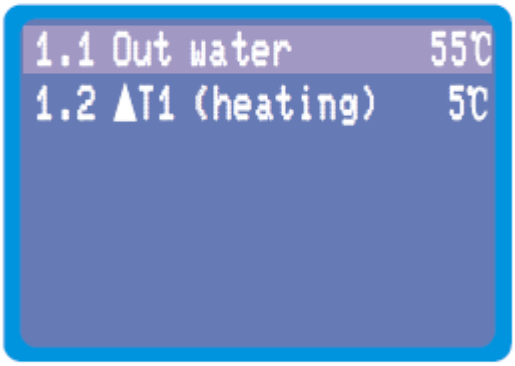


Fig.8

Aux Heating

Press " ▲ " or " ▼ " to move the cursor to "**Aux Heating**" ,then press " ↵ " to confirm and enter interface

of FIG.9. Press " ▲ " or " ▼ " to choose parameter value , then press " **ESC**" to confirm changes , press "**ESC**" to return to last interface.
"**Start temp.** "adjustable range:30 90C "**Start delay** "adjustable range:0 90min

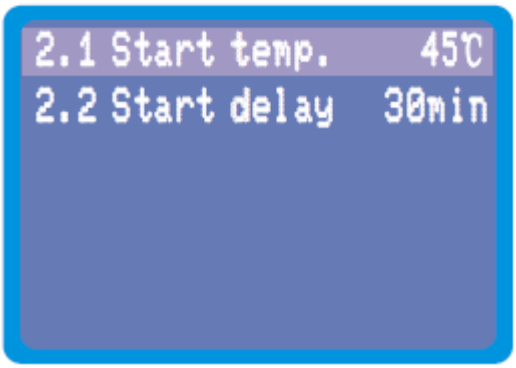


Fig.9

Defrost

Press " ▲ " or " ▼ " to move the cursor to "**Defros**" ,then press "↵ " to confirm and enter interface of FIG.10. Press " ▲ " or " ▼ " to choose parameter value , then press " **ESC**" to confirm changes , press "**ESC**" to return to last interface.
"**Def.cyc**"adjustable range:30 90M(M for minutes)
"**Def.in**"adjustable range:-30 0
"**Def.out** "adjustable range:2 30
"**Max time**"adjustable range:1 12M

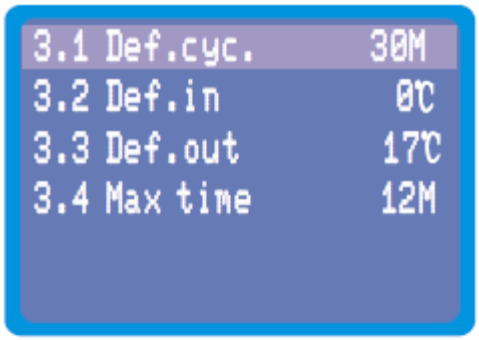


Fig.10

Save

Press " ▲ " or " ▼ " to move the cursor to " ave" ,then press " ↵ " to confirm and enter interface of FIG.11.Press " ▲ " or " ▼ " to choose parameter value , then press " ESC" to confirm changes , press "ESC" to return to last interface. Adjustable value : "0" or "1"

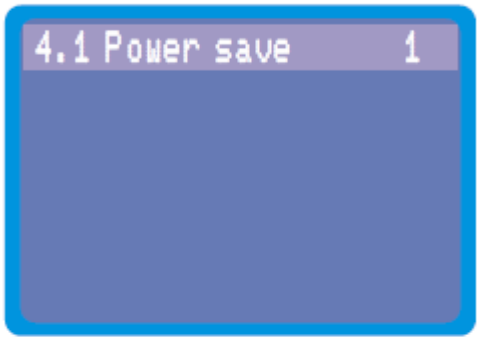


Fig.11

Disinfection

Press " ▲ " or " ▼ " to move the cursor to "**Disinfection**" ,then press " ↵ " to confirm and enter interface of FIG.12. Press " ▲ " or " ▼ " to choose parameter value , then press " **ESC**" to confirm changes , press "**ESC**" to return to last interface.

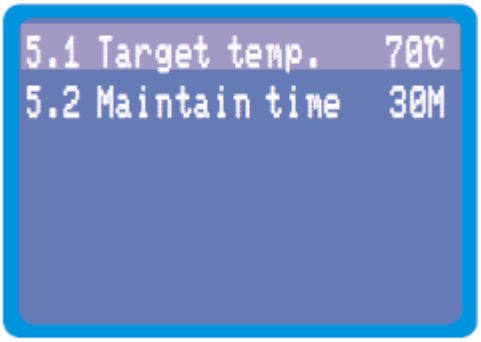


Fig.12

Swell Valve

Press " ▲ " or " ▼ " to move the cursor to " **well valve**" ,then press " ↵ " to confirm and enter interface of FIG.13.

Press " ▲ " or " ▼ " to choose parameter value , then press " **ESC**" to confirm changes , press "**ESC**" to return to last interface.
" **Mode**" have " Auto" and "Manual " 2 options to choose.
"**Over Heat** "Adjustable value :-20 20
"**Adjust step** "Adjustable value :100 500N

Fig.13

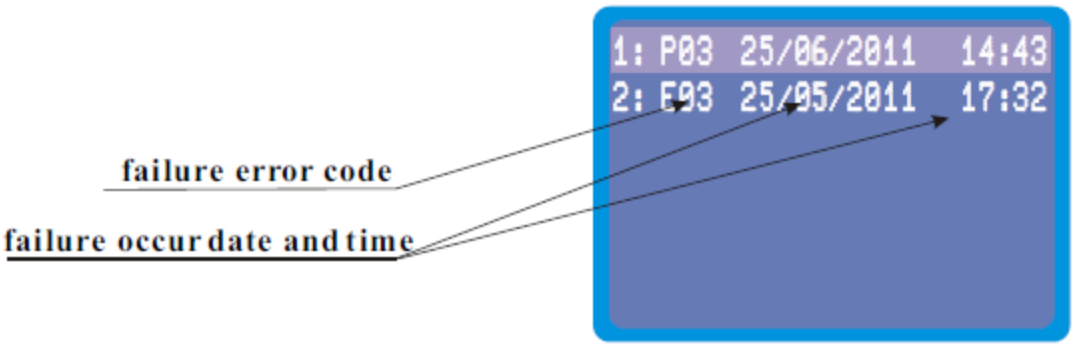


Fig.14

Timer

Choose "**TIMER** " from FUNCTION SCRREN to access "**TIMER**" screen, then press **ENTER**"button to access the "**TIMER**"

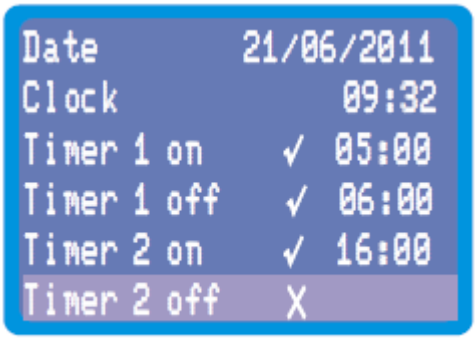


Fig.15

„Date" and „Clock" setting

Press " ▲ " or " ▼ " to move the cursor to **"Date" or " Clock"** ,then press "↵ " to confirm and enter interface of FIG.15. Press " ▲ " or " ▼ " to choose parameter value , then press " **ESC**" to confirm changes , press "**ESC**" to return to last interface.

TIMER ON/OFF SETTING

You may set both "Timer 1" and" Timer 2" 2 period time at the same time

TIMER 1 ON/OFF SETTING

Move the cursor to "**Timer 1 on** ", press "↵ " once , "X " flashes . Then press " ▲ " or " ▼ " , "√' " flashes , pressor " ↵ " once , timer on function start to take affect . At the moment, you may press " ▲ " or " ▼ " to set the time of Timer On, then press " " or " **ESC**" to confirm . Move the cursor to"**Timer 1 off** " , press "↵ " once, " " flashes . Then press " ▲ " or " ▼ " , "√ " flashes , press " " once , timer off function start to take affect . At the moment, you may press " ▲ " or " ▼ " to set the time of Timer Off, then press" " or " **ESC**" to confirm .

TIMER 2 ON/OFF SETTING

The setting operation is same as "TIMER 1 ON/OFF"

CONTROLLER INTRODUCTION AIR SOURCE HOT WATER UNIT

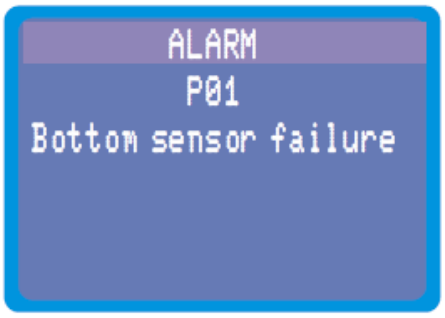


Fig.16

Malfunction Display

During standby or running state , if malfunction happens to the system, the system will stop to show the malfunction code as the following:

Ordinary malfunctions and Solutions

Failure	Controller on the water tank	Indicator light	Cause	Solutions
Stand by		Off		
Unit running		On		
Lower tank water temp. sensor failure	**P01**	1 on 1 off	The temp. sensor is open or short circuit	Check and replace the temp. sensor for the upper tank water
Upper tank water temp. sensor failure	**P02**	2 on 1 off	The temp. sensor is open or short circuit	Check and replace the temp. sensor for the lower tank water
Inlet evaporator. temp. sensor failure	**P03**	3 on 1 off	The temp. sensor is open or short circuit	Check and replace the temp. sensor for the evaporator inlet
Outlet evaporator temp. sensor failure	**P04**	4 on 1 off	The temp. sensor is open or short circuit	Check and replace the temp. sensor for the evaporator outlet
Ambient temp. sensor failure	**P05**	5 on 1 off	The temp. sensor is open or short circuit	Check and replace the temp. sensor for the Ambient
High pressure protect	**E01**	6 on 1 off	1,too much refrigerant in the unit 2,bad heat exchanger on the air	1. discharge the redundant gas 2. clean the air side heat exchanger
Low pressure protect	**E02**	7 on 1 off	1,the refrigerant is not enough 2,block on the filter or capillary 3,water flow is not enough 4,expansion sensor is broken	1.check if there is any leak and refill the gas 2.replace the filter or capillary 3.clean the water side exchanger or discharge the air in the water loop 4.use new expansion valve
AUX-heating thermal protect	**E03**	8 on 1 off	The electronic heating temp. protect	Check the water supply or tank whether have enough water
Communication failure	**E08**	On	Communication failure between wire controller and main board;	Check the wire connection between the wire controller and the main board
Defrosting	**Defrosting indicate**	flash		

Fig.	Description and content:		Setting range/option	Default value	Remark
1	Stand-by status: Outlet water temperature:		/	/	Actual tested value,not adjustable
	Stand-by status: Target/setting water tempertaure		10~60° C	55° C	Adjustable
2	Running status: Outlet water temperature		/	/	Actual tested value,not adjustable
	Running status: Target/setting water temperature		/	/	Actual tested value,not adjustable
3	available functions:Main		as select option	/	/
4	main menu: Mode select/Unit status		as select option	/	/
5	Mode sdect :		as select option	/	/
	Aux heating		on/off	off	Adjustable
	Fan mode		on/off	off	Adjustable
6	Unit status		Tank top temperature.	/	Actual tested value,not adjustable
			Tank bottom temperature	/	Actual tested value,not adjustable
			Pipe temperature	/	Actual tested value,not adjustable
			Evaporator temperature	/	Actual tested value,not adjustable
			Ambient temperature	/	Actual tested value,not adjustable
			Swell valve	/	Actual tested value,not adjustable
7	Parameter	1.0 Operation			
		1.1 Out water	10~60° C	55° C	Adjustable
		1.2 ▲T1(heating)	2~15° C	5° C	Adjustable
		2.0 Aux heaitng			
		2.1 Start temperature	30~90° C	55° C	Adjustable
		2.2 Start delay	0~90 *5min	40 *5min	Adjustable
		3.0 Defrost			
		3.1 Defrost cycle	30~90 minute	45minute	Adjustable
		3.2 Defrost in temperature	-30~0° C	-7° C	Adjustable
		3.3 Defrost out temperature	2~30° C	13° C	Adjustable
		3.4 Max time	1~12 Minute	8 Minute	Adjustable
		4.0 Save			
		4.1 Power save	0(NO)/1(YES)	1(YES)	Adjustable
		5.0 Disinfection			
		5.1 Target temperature	30~70° C	65° C	Adjustable
		5.2 Maintain time	0~90Minute	30Minute	Adjustable
		6.0 Swell valve			
		6.1 Mode	Auto/Manual	Auto	Adjustable
		6.2 Over heat	-20~20° C	5° C	Adjustable
		6.3 Adjust step	100~500 N	350 N	Adjustable
8	Maintenance	see "Ordinary malfunctions and Solutions"			Actual running record, not adjustable
9	Timer	Date	/	/	Adjustable
		Clock	/	/	Adjustable
		Timer 1 on	√ (YES)/ ×(NO)	×(NO)	Adjustable
		Timer 1 off	√ (YES)/ ×(NO)	×(NO)	Adjustable
		Timer 2 on	√ (YES)/ ×(NO)	×(NO)	Adjustable
		Timer 2 off	√ (YES)/ ×(NO)	×(NO)	Adjustable
10	Alarm (P01~E08) see "Ordinary malfunction and Solutions" table		/	/	Actual running record, not adjustable

Maintenance

Heat pump water heater need to be timely check the operation status. If the units can be well maintained in a long term, you can see surprising improvement for reliable operation and long life span

1.Tap water inlet shall install with a filter and clear termly, to ensure good water quality.
2.The surrounding of the units must keep clean and dry , good ventilation.
3.Termly clean the side heat exchanger to keep good heat exchange efficient.
4.If the units will be shut off for a long time, please make sure to drain all the water inside the system, and cut off the power supply. Please perform profound system inspection before you start the units again

Appendix
Controlling board access